

LISTING OF THE CLAIMS

Claims:

What is claimed:

1.(original) A variable constant volume cooling/heating unit comprising:

- a) a two position three way valve, a warm water runout pipe for supplying warm water, a cold water runout pipe for supplying cold water, the warm water runout pipe and cold water runout pipe connected to the two position three way valve,
- b) a modulating three way valve,
- c) a supply pipe connected to the two position three way valve and modulating three way valve, and wherein the modulating three way valve is located downstream from the supply pipe,
- d) a pump located downstream from the modulating three way valve,
- e) a water coil having a coil outlet and located downstream from the pump, the pump for pumping water through the water coil,
- f) a return water main and a return water runout pipe, the return water runout pipe connecting between the coil outlet and the return water main, the return water runout pipe connected to the coil outlet for receiving the flow of return water and connected to the return water main, and
- g) a connecting pipe connected to the modulating three way valve and return water runout pipe and for allowing return water to flow to the modulating three way valve and wherein the modulating three way valve is for allowing all, a portion of, or none of the return water to flow there through.

2.(original) The variable constant volume cooling/heating unit according to claim 1 further comprising a thermostat in an electronic controlling relationship with the two position three way valve, the modulating three way valve, and the pump, the thermostat for controlling the two position three way valve, the modulating three way valve, and the pump.

3.(original) The variable constant volume cooling/heating unit according to claim 1 wherein for maximum cooling, the two position three way valve is opened to allow flow from the cool water main, and the modulating three way valve is opened to allow flow of cool water to the water coil, and the modulating three way valve is closed with respect to the flow of return water exiting the water coil to prevent recirculation of the cool water through the water coil.

4.(original) The variable constant volume cooling/heating unit according to claim 1 wherein for maximum heating the two position three way valve is opened to allow flow from the warm water main and the modulating three way valve is opened to allow flow to the water coil, and the modulating three way valve is closed with respect to the water exiting the water coil to prevent recirculation of the warm water through the water coil.

5.(currently amended) The variable constant volume cooling/heating unit according to claim 1 ~~wherein the~~ further comprising a thermostat and a ventilation air inlet ~~further comprises~~ having a damper that is in electronic communication with and under the control of the thermostat and the damper is used for controlling the rate of flow of incoming outside air.

6.(original) The variable constant volume cooling/heating unit according to claim 1 further comprising a fan supported therein, the fan for drawing zone return air over the water coil to warm or cool the zone return air and further comprising and exhaust outlet for allowing the return air to be exhausted.

7.(currently amended) The variable constant volume cooling/heating unit according to claim 2 further comprising a fan and wherein the thermostat is in a controlling type relationship with the fan so that ~~to control to rate of~~ air circulation can be controlled.

8.(original) A variable constant volume cooling/heating unit comprising:

a) a two position three way valve, a warm water runout pipe and a cool water runout pipe, the warm water runout pipe and the cool water runout pipe connected to the two position three way valve, the warm water runout pipe for supplying warm water and the cool water runout pipe for supplying cool water, and a return main and a return water runout pipe for returning water to the return main,

b) a modulating three way valve and a supply pipe connected between the two position three way valve and the modulating three way valve,

c) a connecting pipe connecting the modulating three way valve and the return water runout pipe,

d) a coil connecting between the three way modulating valve and the return water runout pipe,

e) a pump located downstream of the modulating three way valve, and

f) a thermostat in electronic communication with the two position three way valve and modulating three way valve, and the pump, the thermostat for controlling the two position three way valve, the modulating three way valve, and the pump so that none, a portion of, or all of the return water exiting the water coil is recirculated through the modulating three way valve and the water coil.

9.(original) The variable constant volume cooling/heating unit according to claim 8 wherein in a full recirculation mode the modulating three way valve closes to cut off incoming water flow from the two position three way valve, and the pump recirculates the water through the water coil.

10.(original) The variable constant volume cooling/heating unit according to claim 8 wherein for no recirculation, the modulating three way valve opens to allow the flow of incoming water and at the same time closes to prevent flow in the recirculation loop.

11.(currently amended) The variable constant volume cooling/heating unit according to claim 8 further comprising a ventilation air inlet through which incoming outside air flows, the ventilation air inlet has a damper in electronic communication with and under the control of the thermostat and the damper is used for controlling the rate of flow of the incoming outside air.

12.(original) The variable constant volume cooling/heating unit according to claim 8 further comprising a fan for moving return air over the coil.

13. (currently amended) A method of heating and cooling with a variable constant volume cooling/heating unit comprising the acts of:

a) providing a two position three way valve, a warm water pipe and a cool water pipe and connecting the warm water pipe and the cool water pipe to the two position three way valve, the warm water pipe used for supplying warm water and the cool water pipe used for supplying cool water, and providing a return water runout pipe connected to a return water main the return water runout pipe used for returning return water to the return water main,

b) positioning a modulating three way valve down stream from the two position three way valve and providing a supply pipe and connecting the two position three way valve to the modulating three way valve with the supply pipe,

c) providing a pump downstream of the modulating three way valve and positioning a thermostat in electronic communication with the two position three way valve and the modulating three way valve and the pump, the thermostat for controlling the two position three way valve and the modulating three way valve,

d) ~~providing a pump downstream from the modulating three way valve and~~ providing an electronic connection between the pump and thermostat,

e) providing a coil, the pump used for pumping water fluid through the coil and providing a fan for moving air across the coil, the coil used for warming or cooling the moving air ~~for being warmed or cooled by the coil~~, and

f) using the thermostat for ~~and~~ controlling the modulating three way valve to thus control the amount of water fluid which is recirculated by the pump through the coil before the water is

returned ~~returning~~ to the return water main through the return runout pipe.

14.(currently amended) The method of providing a variable constant volume cooling/heating unit according to claim 13 comprising the further acts of:

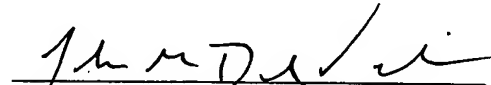
a) providing maximum cooling of the air by opening the two position three way valve such that only cool water from the cool water main flows through the two position three way valve ~~to allow flow from the cool water main,~~ and opening the modulating three way valve ~~to allow flow to~~ such that only cool water arriving through the supply pipe flows through the modulating three way valve and through the water coil, and closing the modulating three way valve with respect to the flow of return water so that return water does not recirculate through the water coil.

15..(currently amended) The method of providing a variable constant volume cooling/heating unit according to claim 13 comprising the further acts of:

a) providing maximum heating of the air by opening the two position three way valve such that only warm water from the warm water main flows through the two position three way valve ~~and allowing flow from the warm water main,~~ and opening the modulating three way valve ~~allowing flow to~~ such that only warm water arriving through the supply pipe flows through the modulating three way valve and through the water coil, and keeping the modulating three way valve closed with respect to the flow of warm water so return water does not recirculate through the water coil.

3. Applicant amended claims 5, 7, 11, 13, 14, and 15.
Applicant believes that all the claims in the application are in condition for allowance. Applicant respectfully requests that the Examiner enter the amendments and allow all the claims in this application.

Respectfully submitted,


John M. DeI Vecchio
Reg. No. 42,475

Hodgson Russ LLP
One M&T Plaza, Suite 2000
Buffalo, New York 14203
(716)-856-4000
(716)-849-0349 (fax)
jdelvecc@hodgsonruss.com